Advanced Card Systems Ltd.
Card & Reader Technologies

APG8201
PINhandy 1

Technical Specifications V2.05

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1.0. Introduction

As technology becomes more sophisticated, fraud-related incidents in banking sector becomes more prevalent. These occurrences generate billions of dollars worth of losses and bring distress among credit and debit cardholders. Certain security measures and systems are created specifically to protect cardholders from frauds, which makes the APG8201 PINhandy Smart Card Reader a reliable tool to fight these occurrences.

The APG8201 PINhandy uses a two-level authentication process which requires the cardholder to insert the EMV card into the device and enter a Personal Identification Number (PIN) using the built-in PIN-pad. APG8201 PINhandy performs secure authentication which can be used as login before performing several transactions like online transactions, banking logons, and payments.

APG8201 PINhandy is a portable, low-cost, and hand-held smart card device which supports Secure PIN Entry (SPE) to assure safe PIN entry and PIN change while connected in a personal computer to perform various authentication applications. The PIN is securely entered on the device rather than the vulnerable personal computer or workstation, hence eliminating the possibility of a virus (Trojan) getting hold of the PIN.

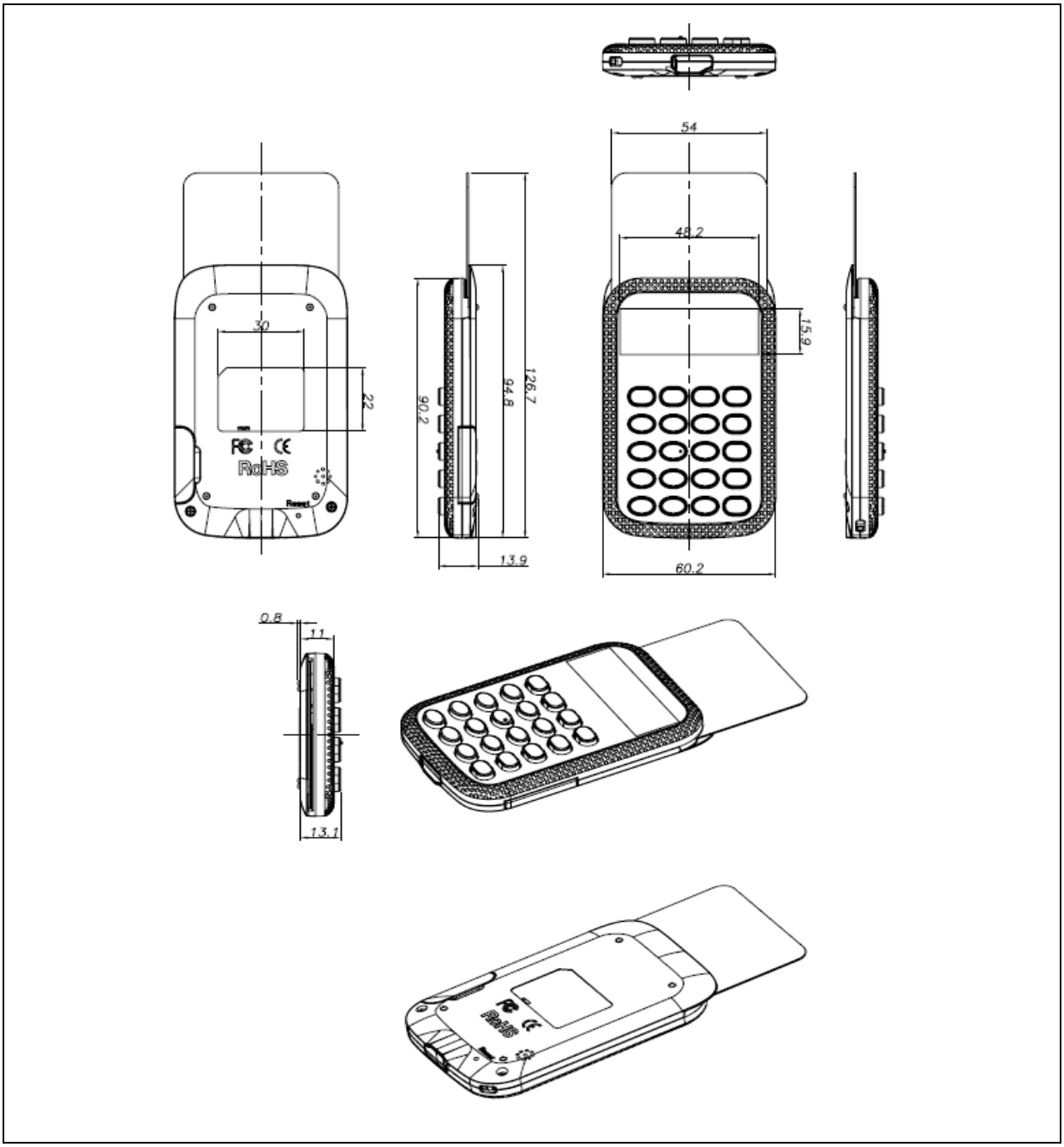
2.0. Features

- Handheld device with compact and portable design
- USB Full Speed Interface
- Plug and Play – CCID support brings utmost mobility
- Smart Card Reader:
  - Supports full-sized microprocessor cards (T=0, T=1 Protocols)
  - Supports ISO 7816 Class A cards
  - Allows semi-insertion of cards
  - Short Circuit Protection
- Application Programming Interface:
  - Supports PC/SC
  - Supports CT-API (through wrapper on top of PC/SC)
  - Supports PPS (Protocols and Parameters Selection)
  - Supports SPE
- Built-in Peripherals:
  - Dot Matrix LCD
  - LCD Resolution: 96 × 16 pixels
  - LCD Number of characters: 16 characters × 2 lines
  - Monotone buzzer
  - Durable tactile keypad with 20 silicone rubber keys
  - Key symbol on LCD to recognize SPE mode
- Supports Android™ 3.1 and later
- Compliant with the following standards:
  - ISO 7816
  - EMV™ Level 1 (Contact)
  - PC/SC
  - PC/SC 2.0 Part 10 – Secure PIN Entry
  - CCID
  - CE
  - FCC
  - RoHS 2
  - FIPS 201 (USA)
  - Microsoft® WHQL

3.0. Typical Applications

- e-Government
- e-Banking and e-Payment
- e-Healthcare
- Transportation
- Loyalty Program

4.0. Technical Specifications



Physical Characteristics	
Dimensions	95 mm (L) × 60 mm (W) × 11 mm (H)
Weight	49 g (with batteries)
Color	Black
USB Host Interface	
Protocol	USB CCID
Connector Type	Standard Type A
Power Source	From USB Port
Speed	USB Full Speed (12 Mbps)
Supply Voltage	5 V
Supply Current	Max. 50 mA
Cable Length	1.5 m, Detachable

Contact Smart Card Interface

Number of Slot ..... 1 Full-sized Card Slot
Standard ..... ISO 7816 Class A (5 V)
Protocol ..... T=0; T=1
Supply Current ..... Max. 50 mA
Smart Card Read/Write Speed..... 1.743 Kbps – 250 Kbps
Short Circuit Protection ..... (+5) V/GND on all pins
Clock Frequency ..... 2 MHz
Card Connector Type ..... ICC Slot 1: Contact
Card Insertion Cycles ..... Min. 100,000

Built-in Peripherals

LCD ..... Dot Matrix LCD
..... Resolution: 96 pixels × 16 pixels
..... Number of characters: 16 characters × 2 lines
Buzzer ..... Monotone
Keypad ..... 20 keys

Other Features

Functions ..... Built-in Calculator

Application Programming Interface

PC-linked Mode..... PC/SC
..... CT-API (through wrapper on top of PC/SC)

Operating Conditions

Temperature ..... 0 ºC – 50 ºC
Humidity ..... Max. 90% (non-condensing)
MTBF ..... 60,000 hrs

Certifications/Compliance

ISO 7816, USB Full Speed, EMV™ Level 1 (Contact),PC/SC, PC/SC 2.0 Part 10 (SPE), CCID, CE, FCC, RoHS 2, FIPS 201 (USA), Microsoft® WHQL

Device Driver Operating System Support

Windows® 2000, Windows® XP, Windows Vista®, Windows® 7, Windows® 8, Windows® 8.1, Windows® 10
Windows® Server 2003, Windows® Server 2008, Windows® Server 2008 R2, Windows® Server 2012, Windows® Server 2012 R2
Linux®, Mac OS®, Solaris, Android™ 3.1 and later